

Amdt. dated Feb. 6, 2006 - 10 -  
Reply to Office Action of September 6, 2006

Miguel PEETERS  
Appl. No. 10/067,780

***Amendment to the Drawings***

The attached sheet of drawings includes changes to FIG. 3. This sheet replaces the original sheet including FIG. 3.

***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 17-31 are pending in the application, with claims 17, 23, 25, 29, and 30 being the independent claims. Claims 17, 19, 20, 23, 25, 26, 29, and 30 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

***Objections to the Drawings***

In the Office Action, the Examiner objected to the drawings as “failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: step 51, step 53, step 55, step 57 etc.” In response to this objection, Applicants are submitting one sheet of replacement drawings that includes figure 3. Figure 3 has been amended to include the reference signs mentioned in the description. Accordingly, reconsideration and withdrawal of the objections to the drawings is respectfully requested.

***Rejections under 35 U.S.C. § 112***

In the Office Action, the Examiner rejected claims 25-29 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully traverses this rejection.

The rejection states that claims 25-29 contain “subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification provides adequate written description support for claims 25-29. For example, in para. [0043] of Applicant's published application (Pub. No. 2003/0152155), the specification states "[a] decoder 35 generates (step 73) the received bits from the received constellation points. The received bits must be correctly assigned to the bits in the frame by undoing the mapping of bits to tones carried out in the tone generator 17. Since the sequence of permutation of bits to tones is predetermined, and shared by receiver and transmitter, this can be readily accomplished." The process of mapping bits to tones is described in para. [0029] – [0038].

These citations, among others, show that the specification describes the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. See, e.g., *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319, (Fed. Cir. 2003). A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. M.P.E.P. §2163, citing *In re Wertheim*, 541 F.2d 257, 263 (CCPA 1976).

Based on the foregoing, Applicant respectfully submits that the specification provides adequate support for claims 25-29 and furthermore, that the Examiner has not met the burden of presenting by a preponderance of evidence why a person skilled in the

art would not recognize in an applicant's disclosure a description of the invention defined by the claims. Reconsideration and withdrawal of the rejection is therefore respectfully requested.

***Rejections under 35 U.S.C. § 102***

Claims 17-19, 22, 23, 24, 30, and 31 were rejected under 35 U.S.C. §102(e) as being anticipated by Betts, U.S. Publication No. 2001/0031011 (Betts). Applicant respectfully traverses this rejection.

Betts does not teach or suggest each and every element of Applicant's independent claims 17, 23, and 30. Betts describes a tone ordered discrete multitone interleaver that "modifies the number of bits assigned to adjacent tone pairs so that adjacent tones have a different number of bits assigned to them." (Betts, para. [0050]). In Betts, the receiver may "identify specific sets of tones that are degraded by correlated noise and apply the tone ordered discrete multitone interleaver only to those tones." (Betts, para. [0054]). In this mode, "the trellis encoder, with constellation encoder and gain scaler 210, will process the bits on selected tones in a new sequential order." (Betts, para. [0054]).

Thus, Betts does not teach or suggest a method including "(a) receiving, in an assignment module, a first unique tone order mapping sequence in a set of unique tone order mapping sequences, wherein the first unique tone order mapping sequence defines a first order of the plurality of tones ... (e) repeating steps (c) and (d) for each unique tone order mapping sequence in the set of unique tone order mapping sequences, wherein the set of unique tone order mapping sequences includes one mapping sequence for each possible permutation of tone ordering, wherein the number of permutations is based on

the number of tones being used for the transmission,” as recited in amended independent claim 17.

Betts also does not teach or suggest a discrete multitone transmitter including a tone generating having “means for defining a set of unique tone order mapping sequences, wherein the set of unique tone order mapping sequences includes one mapping sequence for each possible permutation of tone ordering, wherein the number of permutations is based on the number of tones being used for the transmission” and “means for assigning bits in one of the plurality of frames to the plurality of tones according to a unique tone order mapping sequence in the set of unique tone order mapping sequences, wherein the means for assignment uses each of the unique tone order mapping sequences before repeating any of the unique tone order mapping sequences in the set of unique tone order mapping sequences,” as recited in amended independent claim 23.

Finally, Betts does not teach or suggest a method including “generating, in a scrambling module, a set of unique tone order mapping sequences, wherein each unique tone order mapping sequence defines an order for assigning bits to the plurality of tones and wherein the set of unique tone order mapping sequences includes one mapping sequence for each possible permutation of tone ordering, wherein the number of permutations is based on the number of tones being used for the transmission; and for a first plurality of frames, assigning bits in each frame to the plurality of tones according to one tone order mapping sequence in the set of tone order mapping sequences, wherein each unique tone order mapping sequence is used once during the assignment cycle for the first plurality of frames,” as recited in amended independent claim 30.

For at least the foregoing reasons, amended independent claims 17, 23, and 30 are patentable over Betts. Claims 18, 19, and 22 depend from claim 17; claim 24 depend from claim 23, and claim 31 depends from claim 31. For at least the above reasons, and further in view of their own features, claims 29, 22, 24, and 31 are patentable over Betts. Reconsideration and withdrawal of the rejection is therefore respectfully requested.

***Allowable Subject Matter***

Applicant notes with appreciation the Examiner's indication that claims 20 and 21 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

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Prompt and favorable consideration of this Amendment and Reply is respectfully  
requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read "Lori A. Gordon". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

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Date: 2-6-07

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